

904 and generates a drive signal to be applied to each of the oscillatory actuators **115a** to **115d**. The processing in step **S707** and the following steps is similar to the processing in step **S104** and the following steps of the vibration control processing **1** explained in the first embodiment (see **FIG. 5**) except for the fact that there are a plurality of oscillatory actuators **115a** to **115d** driven, so an explanation will be omitted. As a result of the vibration control processing **6**, oscillatory waves having phases calculated at step **S704** are given to the touch panel **502** from each of the oscillatory actuators **115a** to **115d**.

[**0351**] As explained above, according to the present embodiment, the CPU **904** adjusts the phases of the drive signals applied to each of the oscillatory actuators **115a** to **115d** so that the amplitude of the vibration occurring at a touched position on the touch panel **502** becomes the greatest due to mutual interference of oscillatory waves generated from each of the oscillatory actuators **115a** to **115d**. Therefore, the ATM **90** can efficiently drive the oscillatory actuators **115a** to **115d** and give a greater vibration to the fingertip of the user while keeping down the power consumption required for the vibration report.

[**0352**] Note that in this embodiment, the explanation was given of the case of adjusting the phases of the drive signals applied to each of the oscillatory actuators **115a** to **115d**. It is however also possible to adjust something other than the phases, for example, the amplitudes of the drive signals. Further, the number of the oscillatory actuators provided is not limited to four. Further, the oscillatory actuators may be provided for example at the touch panel **502** or may be provided as shown in **FIG. 27** sandwiched between the liquid crystal display panel **501** and the touch panel **502**.

[**0353**] Further, it is also possible to divide the front surface of the touch panel **502** into units of about the area touched when a fingertip touches the touch panel **502**, calculate in advance for each section the phase data of a drive signal to be applied to each of the oscillatory actuators **115a** to **115d** when a divided section is touched, and store a data table storing the results of calculation in the memory **902**. When adopting this configuration, it is not necessary to perform real time computing of the phases of the drive signals to be applied to the oscillatory actuators **115a** to **115d** based on a touched position. Therefore, it is possible to improve the response speed of a vibration report for a touch operation.

[**0354**] Further, **FIG. 59** and **FIG. 60** are sectional views for explaining an ATM according to a modification of this embodiment. The front surface of the touch panel **502** of the ATM according to this modification has overlaid on it a deformation layer **550** comprised of a high viscosity liquid substance or gel or a fine particulate substance covered by a deformable protective film. Note that the liquid substance, gel, particulate substance, and protective film of this deformation layer **550** are transparent.

[**0355**] In such an ATM, when driving the oscillatory actuators **115a** to **115d**, a wave occurs on the surface of the deformation layer **550** due to the vibration generated by the oscillatory actuators **115a** to **115d**. The CPU of the ATM adjusts the phases of a drive signal to be applied to each of the oscillatory actuators **115a** to **115d** so that the height of the surface of the deformation layer **550** at a touched position becomes higher than at the time not touched due to

mutual interference of the waves generated for each oscillatory actuator **115a** to **115d**. Due to this, as shown in **FIG. 59**, it is possible to cause the portion of a touched position in the surface of the deformation layer **550** to rise up.

[**0356**] Alternatively and conversely, the CPU of the ATM adjusts the phases of the drive signals applied to the oscillatory actuators **115a** to **115d** so that the height of the front surface of the deformation layer **550** at a touched position becomes lower than at the time not touched due to mutual interference of the waves generated for each oscillatory actuator **115a** to **115d**. Due to this, as shown in **FIG. 60**, it is possible to cause the portion of a touched position in the front surface of the deformation layer **550** to sink.

[**0357**] In this way, according to this modification, it is possible to report to the user that a touch operation has been received by changing the thickness of the deformation layer **550**. Further, it is possible to give a user performing a touch operation a pressing feeling of a touch button displayed on the screen by controlling the oscillatory actuators **115a** to **115e** so as to make the front surface portion of a touched position in the deformation layer **550** sink.

[**0358**] Note that in this modification, not only the phases but also the amplitudes of the vibration caused at the oscillatory actuators **115a** to **115d** and the shapes of waveforms and directions of the vibration are important factors in controlling the driving of the oscillatory actuators **115a** to **115d**. It can be derived from this that it is preferable to divide the surface of the touch panel **502** into units of about the area touched when touching the touch panel **502** by the fingertip, calculate in advance for each section the waveform data of a drive signal to be applied to each of the oscillatory actuators **115a** to **115d** when a divided section is touched, and store in a memory a data table storing the results of calculation.

[**0359**] [L: Twelfth Embodiment]

[**0360**] In this embodiment, description will be given on an electronic device having a plurality of vibration generators in the same way as the eleventh embodiment and switching a vibration generator to be driven based on a touched position on the touch panel. Note that in this embodiment, the same reference numerals will be used for portions common with the eleventh embodiment. Further, explanations of portions common with the eleventh embodiment will be omitted.

[**0361**] [L-1: Configuration of Twelfth Embodiment]

[**0362**] **FIG. 61** is a view for explaining an ATM according to this embodiment.

[**0363**] As shown in the figure, the back surface of the liquid crystal display panel **501** over which the touch panel **502** is laid is provided at its four corners with a total of four oscillatory actuators **115a** to **115d**. Further, as shown in the figure, the touchable area on the touch panel **502** is divided into a plurality of areas **A1** to **A5**. In the present embodiment, when performing a reporting operation by vibration, an oscillatory actuator(s) to be driven is selected from among the oscillatory actuators **115a** to **115d** in accordance with which area of the areas **A1** to **A5** a touched position on the touch panel **502** is contained.

[**0364**] The hardware configuration of the ATM according to the present embodiment is similar to that shown in **FIG.**